

**ADVANTAGES AND DISADVANTAGES OF DISRUPTIVE INNOVATION IN THE
CONTEXT OF INDONESIA'S ECONOMIC DEVELOPMENT: NEED
REGULATIONS?**

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ABSTRACT

This study is intended to elaborate the disruptive innovations. Furthermore, this study try to explain the advantages and disadvantages of disruptive innovations, as well as the role of regulation in that context. Data analysis method used is descriptive qualitative analysis. Descriptive modelling approach provides an easy understanding. The study concludes that in an economy, especially for developing country like Indonesian economy, a disruptive innovation is a necessity. It cannot be prevented and prohibited. The prohibition of innovation will actually inhibit the creativity. On the other hand, the transition period needs to be well mediated so that the conflicts of interest can be minimized. It takes the role of government in regulating and stabilizing the effect of disruptive innovation.

Keywords: Disruptive Innovation, regulation, advantage, disadvantage.

INTRODUCTION

Nowadays, many Indonesians hear about the emergence of new companies that disturb the old company. Basically, the new competitor has a unique advantage when compared with the incumbent. There are many examples, for example, which are still a pro-contra, the online motorcycle taxi phenomenon that replaces the conventional motorcycle taxi. Other examples such as online hotel booking technology that replaces conventional booking.

Various phenomena that existed obviously happened not without cause. First, technological developments have an enormous influence on the direction of change and innovation. Secondly, the high demand for efficiency and effectiveness of causes producers to need to innovate. At this level it can be said that the saying says "no smoke if no fire" applies in the context of the emergence of new company with innovations. The need for efficiency is a powerful cause of how producers must innovate to enter the market.

Newcumbent brings innovation. The innovation often causes disagreement with the incumbent. The use of technology provides maximum service at an efficient cost. The factor is certainly causing the incumbent consumer to switch to newcumbent. Incumbent businessmen who feel disturbed protest and demo for newcumbent banned from operating. In fact, the protests could lead to clashes.

The situation in Indonesia shows a conflict of interest incumbent with newcumbent that brings innovation. Conflicts should be preventable. In fact, the conflict still occur between the incumbent and newcumbent. The innovation brought by the newcomer is like a double-edged knife. First, this innovation can facilitate service users and also provide high efficiency. On the other hand, the innovations brought in can also affect the industry. The role of government as a regulator is needed in overcoming the existence of innovation. Until now it can be said Indonesia (in the context of government) relatively still cannot resolve the conflict that occur from disruptive innovation.

From these various explanations, the urgency of the objectives in this study is to elaborate on the disruptive innovation cases found in Indonesia. Of the various cases, it certainly needs to be observed how innovation should be handled. Deeper, it is necessary to describe what are the advantages and disadvantages of disruptive innovations. Last but not least is how the process of consolidation and the role of regulation can give win-win solution.

2. The Nature of Disruptive Innovation

Disruptive Innovation can be interpreted as some innovation that disturb something, or, in simple sentence, it is disruptive. Disruptive word in the economic context cannot be taken its meaning freely. In line with technological developments, disruptive in this context means that new technological innovations will disrupt the old technology.

Traditional market competition theory often makes price as the main parameter in looking at the factors that influence the competition itself (Inge, Wahyuningtyas, & Valcke, 2014). It is often forgotten that in the modern market competition technology has a huge influence. Especially for established companies and the leader of industry, there are too much ego and confidence turn a blind eye to innovations by competitors or newcumbent. The next generation of technology is acceptable for consumers and replaces the technology provided by the established company. This is the basis for how innovations of new technology that replace old technology are called disruptive innovations.

It is very difficult to determine when the disruptive innovations first appeared in the world. However, the term disruptive innovation patented by Clayton M. Christensen in 1997 (Australian

Government: Productivity Commission, 2016). Disruptive innovations were first popularized by disruptive technology terminology. Christensen introduces disruptive innovations as a form of distraction by newcomers/newcumbent. The newcomer competes with an established incumbent company.

Joseph Alois Schumpeter (1883-1950) has a strong theory for explaining innovation. Schumpeter believes that an important factor of economic development is the renewal by entrepreneurs (Sukirno, 1978, page 281). Schumpeter's renewal is a new step for business or company. The renewal can actually be interpreted as innovation. An important factor for such innovations to be called innovation, according to the Schumpeter is that the renewal should be useful to the public at large. Furthermore, the process is part of the production process that is made efficiently and effectively. The process of innovation comes from the creativity of entrepreneurs.

Schumpeter introduces an innovation as (Sukirno, 1978, page 283):

1. Introducing a new (technologically meaningful) goods.
2. Using new ways of producing goods.
3. Expanding the market of goods to new areas.
4. Holding a reorganization within a company.
5. Develop new sources of raw materials.

Of the five reforms classified by Schumpeter it is seen that the final result to be achieved is the efficiency and effectiveness of a production process. Changes made are expected to add value to the product by simplifying the production process itself. The process is basically the thing done by entrepreneurs who innovate.

Renewal (innovation) activities by employers are expected to generate efficiency (Oakey, 2015). From these efficiencies will cause the decline in product prices on a regular basis. Furthermore, market theory began to play its role. With a falling price it will raise public consumption. From the other side it can be seen that the innovation process will open up new job opportunities with higher income. The development and expansion of employment will make many people enter the better labour market. With good work will increase revenue. Increased revenues are likely to be followed by increased consumption as well. In other words, innovation activities by entrepreneurs will increase people's income while increasing their consumption.

3. Research Methods

3.1. Data

The data used in this research is secondary data obtained from TechnAsia, Statista, Central Bureau of Statistics, and other credible electronic information media. These data are used as a tool to provide in-depth analysis. In addition, the data can also provide a concrete example of disruptive innovation. Existing data is presented in the form of diagrams and tables for easy understanding. The data in this study mostly use the type of time series data with a view to describe a development over time.

3.2. Methods of Data Analysis

The analysis method used qualitative descriptive analysis. With this qualitative approach, this study is expected to be able to describe specifically about the position of intrusive innovation in an economy. In addition, qualitative analysis allows for a wider analysis.

3.3. Operational Definition

The operational definition in this research is:

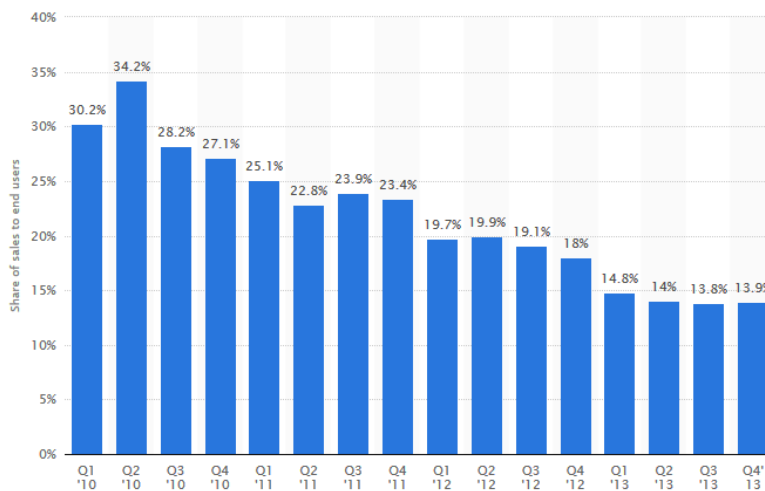
1. Disruptive innovation is a new invention that can create renewal in an existing industry so that in the end can improve the effectiveness and efficiency of production. The word interrupt in this case means a new discovery will disrupt the existence of existing company.
2. Incumbent is a company who has already been in the industry. This company is understood as the party to be disturbed by the emergence of an innovation by newcumbent.
3. Newcumbent is a new company entering the industry. New entrepreneurs entering the industry bring a new innovation that disrupts the incumbent.
4. Government is the state party in case of disruptive innovation acting as regulator and mediator so that conflict between incumbent and newcumbent can be minimized.

4. Discussion

4.1. Failure of Giant Company in Facing Disruptive Innovation

Disruptive innovations occur in different parts of the world. In Europe for example, the largest case example ever happened to Nokia companies. At first Nokia is still full of confidence with its Symbian system. Even when Apple released the iPhone in 2007, Nokia still felt unrivalled and continued its Symbian as a mainstay. While his new competitor, android, continues to solidify its

position in the market. Symbian Nokia's market share began to fall along with Apple began introducing the iPhone 3G in 2008. Symbian market began to look down dramatically when Android was introduced by Google through HTC devices. Starting 2010, Nokia's Symbian market share continues to fall even leaving only 13.9% in 2013



Picture 1. Nokia Market 2010-2013

Source: Statista; <https://www.statista.com/statistics/216513/global-market-share-of-nokia/>

The same thing happens in internet technology. Ten years ago Yahoo was a giant in the world of internet and digital big data. As the Internet giant, Yahoo has a variety of features that qualified to serve Internet users with the maximum, ranging from Yahoo mail, Yahoo messenger, and Yahoo search engines. Everyone who knows the Internet must know Yahoo. At that time, many news that mentions the value of Yahoo reached 1300 trillion Rupiah. However, in the end this giant released all assets and shares to Verizon. Revolution of the Internet world is very fast with the growing application of smartphones. The other side of the social media explosion also escaped Yahoo. On the other hand, its competitors, Google managed to develop algorithms that capture more sophisticated market share. It can be said Google adopted faster technology so as to innovate. Suppose in the process of index page website, Yahoo still use manual power while Google has been using artificial intelligence. Various Google innovations that are able to defeat Yahoo is a real example of disruptive innovation.

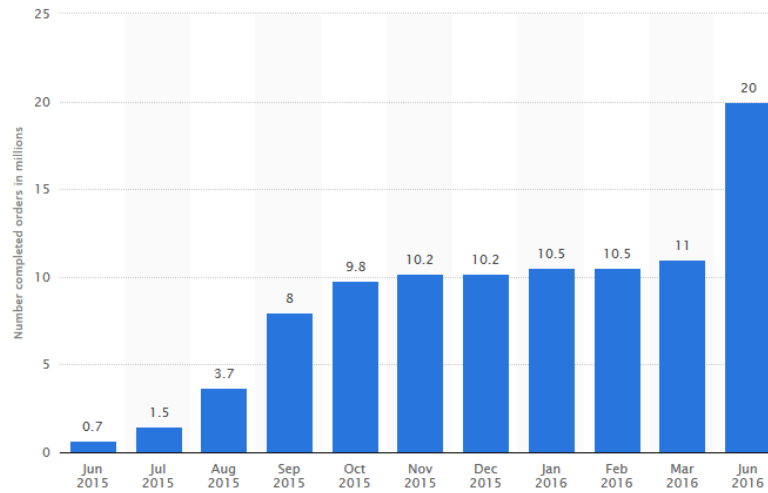
A study by the Australian Government: Productivity Commission in 2016 shows disruptive innovations in the manufacturing, transportation and E-Commerce sectors. Amazon became the largest online retailer and virtual market in Australia. Its existence replaces the conventional market and will surely become an incumbent in a short time. The robotic and online data system has replaced the manual data input in the manufacture industry in Australia. New technology has replaced the human role in the manufacturing industry. Human labour is required to improve its ability and skills to operate robots and other sophisticated systems.

There are many other examples in this world besides the examples described earlier. Nevertheless, some of these examples are enough to point out the potential failure of business giants to absorb change and innovation. Instead of renewing, many of the industry giants are overconfident with their greatness.

4.2. Disruptive Innovation in Indonesia

Small barrier to enter the market make the transportation industry very easy to enter new players, such as motorcycle taxis online. In this sub-chapter and beyond, the disruptive innovation context will be understood as a phenomenon with the context of Indonesia economy.

When it was first established in 2011, not so many know "Go-jek" as an online taxi bike in Indonesia. According to tech in Asia, Go-jek starts with twenty drivers in 2011. Until the end of 2016, the drivers of Go-jek have reached 200,000 people. The steady position in the public transport market makes Go-Jek expand its business to other cities such as Yogyakarta, Surabaya, Manado, Medan, Semarang, and Balikpapan. In the middle of 2015, Go-jek experienced a significant increase. The Application has been downloaded 1,600,000 times. Usage also increases sharply, even 138% every month. In 2016, Go-jek released a new "Go-Car" service that provides car transport services, different from conventional taxi. Until finally, at the end of 2016, the investment value of Go-jek was recorded at US \$ 550 million



Picture 3. The progress of the order completed by Go-jek

Source: Statista; <https://www.statista.com/statistics/712089/number-of-go-jek-s-monthly-completed-orderin-indonesia/>

Conflicts are most likely to occur in response to the intrusion of innovations, and they do not necessarily happen (Sourdin, 2015). Like the case of Go-jek, at the beginning of the establishment there was no public transport company that felt unrivalled. However, with the growing development of Go-jek and the wider market share, many incumbent parties start to feel disturbed. In March 2016 for example the drivers of a conventional taxi company began to feel threatened by the existence of Go-jek. They then strongly protested the existence of Go-jek and requested that Go-jek be banned from operating. Such conflicts cannot be avoided when people dependent on conventional systems are being confronted with disruptive new technologies. Protest against the existence of online transport is actually an example of a form of unpreparedness of accepting new technologies so that technology is considered wrong.

So many disruptive innovations exist in Indonesia. In addition to Go-jek being the prime example, there are other examples, “traveloka” that replace conventional ticket booking systems. The presence of traveloka will certainly disrupt the business continuity of airline ticket agents in various regions. Even the medical field is also not left behind to be affected by the disruptive innovation. The emergence of my Doctor, KlikDokter, and some other online health consultation services caused no small impact. Every time there are doctors who answer questions online. Although not yet at the stage of prescribing, but for some minor health problems of course this innovation is very helpful. In the trade of goods industry, the presence of OLX, tokopedia, and various other sites began to replace conventional goods stores. Now traders do not have to bother

displaying merchandise and hiring clerk. Buyers also do not have to bother to visit the store physically. The presence of this online store is also a disruptive innovation.

Indonesia viewed from the consumer side basically welcomed the new innovations that are said to interfere. However, the readiness of incumbent producers still needs to be improved to accept innovation. Established entrepreneurs should be well aware that in the current global and modern state, the existence of disruptive innovation in Indonesia is a necessity. Protests made even to the point of using violence are a very unwise way of responding to new innovations in Indonesia. This is where the role of government as regulator is needed to find solutions by way of consolidation.

4.3. Regulation and Government: Readiness Accept Innovation

Briefly it can be said according to the preceding definition that intrusive innovation is a new and unprecedented technological invention. Thus, these innovations certainly do not have, or at least have no rules that determine how the technology should work. The role of regulation and government is needed to minimize the conflicts caused by the emergence of innovation (Brummer, 2015). The obvious problem is, the various forms of innovation are present in the form of the company. In any company, its form will be concerned with shareholders, employees, and consumers. The order clearly indicates that new innovations emerging as a company must be clearly positioned in Indonesia's development. An example is Uber, the company is based in the United States, so of course the owner of capital will take precedence. Thus, in the absence of clear regulation will certainly broaden the negative effects caused by Uber. Obviously without any regulation then Uber is not included in public transport so it is not taxed so the benefit for the country cannot be felt. Society in general would be harmed.

Regulations should make things easy, easier for people. It is not wise if people deny the innovation with new technologies that make something easier just because these innovations disrupt the old technology. A letter of notification issued UM.3012 / 1/21 / Phb / 2015 was issued by the minister of transportation whose content prohibits an online motorcycle taxi to operate. It is not wise to hand over those disruptive innovations directly to the free market system. With the submission to the free market, of course it will give the deadly impact of the company with the old technology. It is a wise approach to establishing a new regulation governing the existence of new innovations that disrupt the old innovations. Government as a regulator would need to examine through related agencies (e.g. minister of transportation for Go-jek and Uber) what needs to be arranged in response to the existence of such innovations.

In the face of intrusive innovation, there are four main components for making a regulation (Cortez, 2014). The first component is the timing. In the context of disruptive innovations, the

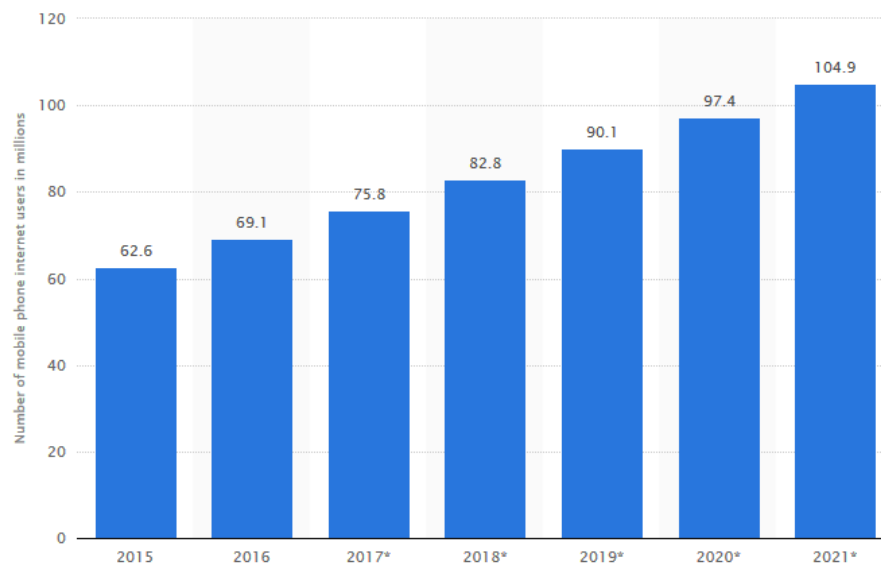
existence of government needs to play a role at the right time. If the government is too early to issue a policy then it will have the potential to cut the development of new technologies that are useful for the community. If the government tries to let the disruptive innovations take too long, then the potential for conflict will be even greater. The second component is the form of policy. In formulating the form of policy, the government should make efforts to study first. It is duper to find the right form of regulation. The third component is endurance. The established regulation is certainly intended to provide an alternative solution. The solution cannot side with one side, but must mediate the interests of all sides. Therefore, the regulation should be able to guarantee the healthy business competition. The fourth component is implementation. This component is very important because with the regulations made expected innovation is not stalled. For that, the implementation of the regulation must run well.

4.4. Innovation Can Only be Defeated by Innovation

Various innovations made both inside and outside the country should be able to be adopted. In the business world known principles of observing, imitating, and modifying. Of course the principle is very relevant to resist the disruptive innovation. As an incumbent company should be aware that competitors will not remain silent and continue to innovate. When making innovations, it helps the old company to observe how the process happens so that eventually able to rival again. If it is indeed very difficult to do because of one thing or another, there is still another way, collaborate. This seems to be starting the Blue Bird Company, a conventional taxi in Indonesia that joins Go-jek. With the agreed collaboration of profit sharing, it will certainly improve services that may increase revenue for both parties.

Today the people of Indonesia really cannot be separated from the gadget. This should be the awareness of company to grow their business online. Estimated in 2021, there are 104.9 million people who are capable and consistent use the internet through gadgets. It should be realized as a potential for maximum profit through various platform gadgets, such as online applications on iOS, Android, MIU, and so on.

Disruptive innovations do not always cause conflict. There are many best practices that can be reviewed in the face of disruptive innovations. Let's say the Yogyakarta city government issued an (though not written) appeal to prevent online motorcycle taxis from passengers at stations, airports and areas used as conventional motorcycle taxis. By paying attention to local wisdom, conflicts can be mitigated. Another example is for example the city of Bandung which is appealed to the creative economy to market their products through the online market. With a good collaboration will certainly increase the income of creative industries.



Picture 3. Internet Users through Gadgets (Indonesia, in Million people)

Source: Statista, 2016 (processed); <https://www.statista.com/statistics/558642/number-of-mobile-internet-user-in-indonesia/>

4.5. Cost and Benefit on Disruptive Innovation

The disruptive case of innovation is complex and very wide. For that it would be wise to assess the overall costs and benefits generated by the disruptive innovations in general. The discussions described earlier are intrinsically already much explained about the benefits and costs that must exist due to the emergence of new innovations that interfere.

The advantages that arise from the disruptive innovations are:

1. Simplify the consumers in sufficient the needs. By cutting costs, companies using the latest technology are able to keep costs low so they can set prices much lower than the incumbent companies. Thus, the lower the cost incurred by consumers increasingly make consumers welfare.
2. Transfer of technology. The emergence of new innovations will certainly bring new and sophisticated technology, at least compared to existing technologies. Thus can be said to happen transfer of technology to a more modern.

3. Encourage innovation-based competition. Indonesia is a country that cannot just prosper without innovation. With this disruptive innovation, companies in the industry are forced to innovate and continue to improve their services.

4. Reduce the number of unemployed. Innovation will provide new job opportunities. If it does not open a new field, at least it can expand existing employment. Especially with innovation can provide new job opportunities with better wages than from pre-existing jobs.

5. Increasing economic growth. Disruptive technologies according to Schumpeter's theory will increase productivity due to efficiency. With those two things, it will increase the quality and quantity of goods produced. On the other hand, innovation will also increase public consumption after previous income increases. The development that becomes the end point is the increasing number of Gross Domestic Product. If every innovation can produce greater value and relatively survive each year, it will increase long-term economic growth.

And the disadvantages arising from the disruptive innovation is:

1. The emergence of conflicts of interest from incumbent companies. As a company that has been consistently in the market, it would be annoyed by the new company that comes in bringing technology that can replace the technology. Of course this will be addressed by the incumbent by trying to block new entrants from entering the market. Thus there will be conflicts. It is necessary for the role of government as a regulator.

2. The financial costs of the state to regulate and create regulations for new and disruptive innovations. In regulating and making regulations, of course, not least the cost that must be issued by the government. Starting from the study conducted, until the control requires a relatively large cost.

3. It is possible disruptive change to dispute. On a large scale, the rejection of this innovation is very likely. With the rejection will certainly turn off the business world. Product development and improvement will not be achieved so that the economic development goal is not achieved.

The most important thing to understand is that the disruptive innovation is a necessity. Innovation cannot be rejected because it will turn creativity, also cannot be left alone because it will damage the market structure. Disruptive innovation is a wild thing (unregulated), but it is useful technology that needs to be regulated and taken advantage of. The transition period is a risky period of negative effects as described previously.

5. Conclusion

Many of the cases explain the failure of company when they face of innovation and development. Despite the disruptive innovation is not a threat, but all parties need to be more vigilant about its presence. The various conflicts that have been described are the result of the lack of alertness of corporations and the public against disruptive innovations. So it is necessary the role of government to establish a regulation that is able to regulate these disruptive innovations. Regulations issued certainly not justified if it makes it difficult even to turn off the existing innovation process. After the transition period the government still needs to keep an eye on these disruptive new innovations. Eventually, each market will adjust, because supply will creates its own demand. All manufacturers will ultimately adjust to the various innovations that exist.

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